AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (Currently Amended) A resource manager for a security system network comprising:

one or more devices for collecting and/or managing data from an environment;

a flow information service storing in a computer readable medium descriptions of media flows in one or more networks, including source device and network, destination device and network, media flow type, and required bandwidth;

one or more users that submit operation requests for the data; and

a controller that: (1) receives at least one of the operation requests, (2) finds available and capable devices appropriate for an operation specified by a received operation request and forms a set of candidates therefrom, wherein each candidate contains one or more of the found ~~founds~~ devices based on (i) the received operation request, (ii) a description of a media flow specified in the operation request, and (iii) load characteristics of the one or more devices, (3) assigns a score to the one or more devices by using: (i) information from the load characteristics of the one or more devices and networks in a networked surveillance system, (ii) descriptions of current media flows stored by said flow information service, and (iii) dynamically configurable user preferences, where the score is a weighted function of the load characteristics, the

current media flows and the user preference, and (4) allocates the one or more devices for the requested operation by selecting the one or more devices from a list of the candidates ranked according to the scores

wherein said resource manager is a multi-user application level variable rate security video media stream application system resource manager that controls grouping of security devices according to the user preferences of multiple users to support security application flows from cameras to: (1) storage devices; (2) image processing analyzers; and (3) displays in a distributed network in which the multiple users: (a) monitor multiple displays; (b) use multiple analyzers filtering the variable rate stream; and (c) use storage devices to store the variable rate security video stream.

2. (Previously Presented) The resource manager according to claim 1 wherein the controller generates allocation requests that attempt to allocate the operation requests to the devices in response to the operation requests.

3. (Previously Presented) The resource manager according to claim 1 wherein the controller generates a graphical representation of the load characteristics.

4. (Previously Presented) The resource manager according to claim 1 wherein the load characteristics include availability of the one or more devices.

5. (Previously Presented) The resource manager according to claim 1 wherein the load characteristics include media flow data of the one or more devices.

6.   (Previously Presented) The resource manager according to claim 5 wherein the media flow data includes a source identifier, a media format, a media bandwidth requirement, a multi-cast address, and a service identifier.

7.   (Previously Presented) The resource manager according to claim 1 wherein the load characteristics include location of the one or more devices, availability of the devices, and current media flow of the devices.

8.   (Previously Presented) The resource manager according to claim 1 wherein the one or more devices include the camera that collects multimedia data.

9.   (Original) The resource manager according to claim 8 wherein the camera streams the multimedia data in one or more media formats.

10.   (Original) The resource manager according to claim 8 further comprising a multimedia recorder that records the multimedia data.

11.   (Original) The resource manager according to claim 10 wherein the multimedia recorder plays the multimedia data in response to the operation requests.

12.   (Original) The resource manager according to claim 10 further comprising an analyzer server that collects meta-data from the multimedia data.

13.   (Original)   The resource manager according to claim 12 wherein the analyzer server collects the meta-data directly from the camera.

14.   (Original)   The resource manager according to claim 12 wherein the analyzer server collects the meta-data from the multimedia recorder.

15.   (Original) The resource manager according to claim 10 further comprising a meta-data server that stores the meta-data.

16.   (Original)   The resource manager according to claim 15 wherein the operation requests include searching the meta-data server for meta-data.

17.   (Original)   The resource manager according to claim 1 wherein the operation requests include record requests, analysis requests, play requests, and search requests.

18.   (Original)   The resource manager according to claim 17 wherein the record requests include at least one of a source camera identifier, a media recording format, a recording purpose, and a duration of recording.

19. (Previously Presented) The resource manager according to claim 17 wherein the analysis request includes the source camera identifier and a duration of analysis.

20. (Original) The resource manager according to claim 17 wherein the analysis request includes an identity and a location of a multimedia file.

21. (Previously Presented) The resource manager according to claim 17 wherein the play request includes the identity and a location of a multimedia file.

22. (Original) The resource manager of claim 1 further comprising an Internet gateway server that connects the users to the security system network.

23. (Original) The resource manager of claim 1 wherein the controller generates a schedule for the requests based on the load characteristics.

24. (Original) The resource manager of claim 1 wherein the controller prioritizes the operation requests.

25. (Previously Presented) The resource manager of claim 1 wherein the operation requests are generated by one of the one or more users, an alarm, and a scheduled event.

26.   (Cancel)

27.   (Currently Amended) A method for allocating resources in a security system network comprising:

collecting data from an environment at one or more network resources;

storing in a computer readable medium descriptions of media flows in one or more networks, including source device and network, destination device and network, media flow type, and required bandwidth;

submitting requests for the data from one or more users;

finding available and capable devices appropriate for an operation specified by at least one of the submitted requests and forms a set of candidates therefrom, wherein each candidate contains one or more of the found devices based on (i) the received operation request, (ii) a description of a media flow specified in the operation request, and (iii) load characteristics of the one or more devices;

assigning a score to the one or more devices by using: (i) information from the load characteristics of the one or more devices and networks in a networked surveillance system, (ii) descriptions of current media flows stored in the computer readable medium, and (iii) dynamically configurable user preferences, where the scores are assigned the following weighted sum formula:

$$S_i = W_{nc} * NCost(src, i)$$

$$+ W_{dpl} * DataPlacementRule(src, i)$$

$$+ W_{load} * (W_{bw} * BW_i + W_{ds} * DS_i + W_{conc} * Conc);$$

wherein W_{nc}, W_{load}, W_{dp}, W_{bw}, W_{ds}, and W_{conc} are weights, src denotes the media source, NCost(src,i) denotes a value in a network proximity matrix and returns a value from [0 ... 1] in which 1 denotes the most preferred and 0 denotes the least preferred, DataPlacementRule(src,i) returns 0 if a candidate device i of the one or more devices is not listed in a data placement rule associated with the camera src and 1 if the device i is included in the rule, combination of BW_i, DS_i, and $Conc_i$ defines load on the candidate device i, BW_i denotes a ratio of available bandwidth and maximum bandwidth on device i, DS_i denotes a ratio of available disk space and maximum disk space on device i, $Conc_i$ denotes a ratio of available concurrency and maximum concurrency of the device i, and this weighted-sum formula produces a score value S_i for a candidate device i; and

allocating the one or more devices for the requested operation by selecting the one or more devices from a list of the candidates ranked according to the scores.

28.   (Original) The method of claim 27 wherein allocating resources includes generating a schedule for the requests based on the load characteristics.

29.   (Previously Presented) The method of claim 28 wherein generating the schedule includes prioritizing the requests based on network criteria.

30.   (Previously Presented) The method of claim 27 wherein allocating the one or more network resources includes determining a set of candidate devices,

assigning scores to each candidate device in the set, and communicating with the candidate devices according to the scores.

31.   (Previously Presented)   The method of claim 30 further comprising calculating the scores according to a current load, a location on a network, and existing media flows.

32.   (Original)   The method of claim 27 wherein communicating with the candidate devices includes determining availability of the candidate devices.

33.   (Previously Presented) The method of claim 27 wherein determining the load characteristics includes generating a graphical representation of the load characteristics.

34.   (Original) The method of claim 33 wherein the graphical representation is a topographical map of the network.

35.   (Previously Presented) The method of claim 34 wherein the topographical map includes indicia of networks and the one or more network resources in the security system network.

36.   (Previously Presented)   The method of claim 33 further comprising determining costs of allocating the one or more network resources to the requests according to the graphical representation.

37.   (Original) The method of claim 36 further comprising storing the costs in a matrix.

38.   (Previously Presented)   The method of claim 27 further comprising generating a set of rules according to preferences of the one or more users.

39.   (Previously Presented)   The method of claim 38 wherein allocating the network resources includes allocating the one or more network resources according to the set of rules.

40.   (Currently Amended) A resource manager for a security system network comprising:

one or more devices for collecting and/or managing data from an environment;

a flow information service storing in a computer readable medium descriptions of media flows in one or more networks, including source device and network, destination device and network, media flow type, and required bandwidth;

one or more users that submit operation requests for the data; and

a controller that: (1) receives at least one of the operation requests, (2) finds available and capable devices appropriate for an operation specified by a received operation request and forms a set of candidates therefrom, wherein each candidate contains one or more of the founds devices based on (i) the received operation request, (ii) a description of a media flow specified in the operation request, and (iii) load characteristics of the one or more devices, (3) assigns a score to the one or more devices by using: (i) information from load characteristics of the one or more devices and networks in a networked surveillance system, (ii) descriptions of current media flows stored by said flow information service, and (iii) dynamically configurable user preferences, and (4) allocates the one or more devices for the requested operation by selecting the one or more devices from a list of the candidates ranked according to the scores ~~The resource manager of claim 1,~~ wherein said controller assigns scores to the one or more devices according to the following weighted sum formula:

$$S_i = W_{nc}*NCost(src,i)$$
$$+W_{dpl}*DataPlacementRule(src,i)$$
$$+W_{load}*(W_{bw}*BW_i+W_{ds}*DS_i+W_{conc}*Conc_i);$$

wherein W_{nc}, W_{load}, W_{dpl} W_{bw}, W_{ds}, and W_{conc} are weights, src denotes the media source, $NCost(src,i)$ denotes a value in a network proximity matrix and returns a value from $[0 \ldots 1]$ in which 1 denotes the most preferred and 0 denotes the least preferred, $DataPlacementRule(src,i)$ returns 0 if a candidate device *i* of the one or more devices is not listed in a data placement rule associated with the camera src and 1 if the device *i* is included in the rule, combination of BW_i, DS_i, and $Conc_i$ defines load on the candidate device *i*, BW_i denotes a ratio of available bandwidth and maximum bandwidth on device

i, DS_i denotes a ratio of available disk space and maximum disk space on device i, $Conc_i$ denotes a ratio of available concurrency and maximum concurrency of the device i, and this weighted-sum formula produces a score value S_i for a candidate device i.

41.   (Previously Presented) The resource manager of claim 40, wherein the weights are user configurable.

42.   (Currently Amended) The resource manager of claim 40 ~~1~~, wherein said resource manager is a multi-user application level variable rate security video media stream application system resource manager that controls grouping of security devices according to the user preferences of multiple users to support security application flows from cameras to: (1) storage devices; (2) image processing analyzers; and (3) displays in a distributed network in which the multiple users: (a) monitor multiple displays; (b) use multiple analyzers filtering the variable rate stream; and (c) use storage devices to store the variable rate security video stream.